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Broese Van Groenou, M.I.; van Tilburg, T.G.

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Network Analysis

M Broese van Groenou and T van Tilburg, Vrije Universiteit, Amsterdam, The Netherlands

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Glossary

Anchor – The central person within the network; the person providing information on who belongs to his or her network.

Full Personal Network – Network in which information is available on all the network relationships; also referred to as a complete network.

Network Analysis – Analytical methods used to compute measures of network structure and content.

Network Content – The type of interaction that takes place within pairs of network members.

Network Delineation – Procedure used to identify the personal network.

Network Structure – Aspects of the total network derived from combining features of individual relationships and the linkages between these relationships.

Personal Network – The group of persons (network members) with whom anchor has a direct relationship.

Star Personal Network – Network in which information is available on relationships between network members and the focal individual; also referred to as an ego-centric network.

Introduction

The personal networks of older people reflect their social opportunities and personal choices to maintain a specific set of relationships with relatives, neighbors, friends, acquaintances, and so on. Network analysis is the method used to identify and examine the structural and functional features of the network of the older adult. The conceptualization and operationalization of the personal network depend on the subject of research. Five approaches to defining personal network membership are presented and discussed. The five approaches differ regarding the part of the personal network that is mapped, and result in networks of different sizes and compositions. Regardless of the type of network delineation, a distinction can be drawn between the star network (data available on relationships with the focal person) and the full network (data available on all the network relationships). Features of the structure and content of both types of personal networks are presented. Finally, network analysis methods are presented and discussed, including ways to analyze hierarchical databases.

Aging and the Personal Network

The Personal Network of Older Adults: An Introduction

The personal network occupies an important place in the lives of individuals. The mere existence of a certain number of relationships has been shown to have beneficial effects; regular interaction with network members (children, relatives, neighbors, friends, and fellow members of organizations) enhances the feeling of being socially integrated and decreases feelings of loneliness. The positive effects of the network are also reflected in better health and a longer life.

Old age has often been associated with loneliness and with social isolation. However, numerous studies have shown over the past decades that the large majority of older adults have at least a few relationships available. The networks of older people usually encompass both kin and non-kin with whom regular contact is maintained. In general, the core of the network consists of close kin (e.g., spouse and children, siblings, parents) and close friends. Depending on the identification method of the network, other network members such as extended kin, neighbors, (former) co-workers, acquaintances, members from organizations, and so on may also be identified. The younger old who are socially active in many parts of society and who experience few physical restrictions in general have large networks that are composed of a large number of non-kin. The oldest old, who often experienced life transitions such as widowhood, retirement, and a decline in physical mobility, usually have smaller networks that enclose network members that are emotionally close (children, friends) or geographically close (neighbors).

In addition to the mere presence of relationships, interaction with others is important for daily functioning, coping with life events, and maintaining well-being. Feelings, information, services, and material goods can be exchanged between two individuals. These exchanges are often assumed to be supportive in nature. The support provided by network members helps protect individuals from experiencing negative outcomes, helps them in their efforts to improve their situation, and helps them respond to adverse events.

Social researchers have too often studied the personal relationships of individuals without taking the linkages between various network members into account. However, network members do not function independently of each other. It is crucial to regard the interaction between the focal individual and one network member in relation to the interaction with other network members. For example, which of the adult children is to provide support for an elderly parent might be the outcome of a family meeting at which they decide to take turns in caregiving. The study of personal relationships evolves into the study of the personal network if relationships are viewed as part of a large network and if linkages between these relationships are also taken into account. Combining the features of individual relationships leads to insight into the structural aspects of the network. Examples of structural aspects are size, composition (e.g., proportion of kin), and homogeneity (e.g., proportion of same-sex network members). Information regarding the content of the network can be obtained by aggregating the qualities of the individual relationships. Examples of network content are network interaction (e.g., number of frequent contacts) and support intensity (e.g., proportion of instrumentally supportive relationships).

The Impact of Aging on the Personal Network

Old age is often associated with shrinking network size and relationship losses. In the early days of social gerontology, these social losses were considered due to the loss of societal engagement and social activities. Currently, the diversity and changes in the personal network in later life can be understood from three different perspectives: (1) the changes in roles and transitions in later life, (2) the changes in the expected returns from relationships within the network, and (3) individual proactive management of personal relationships.

From early childhood to old age, an individual is surrounded by a variety of persons with whom he or she develops relationships, a so-called 'convoy' of relationships. During the life course some relationships end due to major (role) transitions (divorce, death of the spouse) or minor transitions (moving, changing jobs, entering or leaving organizations), while others may last a lifetime. New members may enter the network as a result of (re)marriage, a new job, or becoming a parent or grandparent. Thus, people enter old age with a personal network that reflects earlier transitions affecting their opportunities and individual choices to maintain and develop relationships. During old age, a phase lasting no less than 20 years for many people, people are in general in a position to exercise greater choices in their relationships. Unfettered by employment obligations and the responsibility for children at home, they generally have greater opportunities to organize and structure their social lives. On the other hand, a decline in health may impose restrictions upon older adults' capacities to engage in interaction with others. Hearing and memory problems can limit conversational exchanges, and reduced physical mobility can limit participation in shared activities. Role changes and restricted capacities in later life lead to a decrease in non-kin relationships and the growing importance of family relationships in the network.

From the second perspective, based on exchange theory, network change in later life results from changes within specific relationships. People constantly evaluate their relationships and prefer balanced support, i.e., they give support with the expectation of receiving something in return at some time. If the receiving party is not able to return the support and it is clear that this will not change in the future, the exchange of support may decline. Older adults may become more dependent on others, lacking the ability to perform certain tasks themselves. The existing balance in their relationships may be disrupted, introducing strain and discomfort. Imbalance results in the decline of supportive exchanges with older adults, in particular with less close relationships. Imbalance does not always end in the termination of a relationship, however, as overbenefiting of needy older adults can be normatively accepted and even desirable.

From the third perspective, based on the socioemotional selectivity theory, network change results from changes in an individual's motivation. With increasing age, the time horizon is limited, and emotional regulation becomes the most important drive for social interaction. As a result, older people disengage from peripheral relationships because the emotional engagement with core network relationships is more rewarding. This explains the selective shrinking in network size with age. People feeling near to death deliberately discontinue their less close relationships, reduce the emotional closeness with many others, and increase the emotional closeness with core network members such as kin and friends.

It can be concluded that dynamics in the personal networks of older people are related to changes in situational and personal characteristics. A network is the result of macro-social trends that create individual opportunities to maintain a personal network, but it also reflects individual transitions, relationship standards, and personal characteristics. In studying the networks of elderly people, it is recommended to relate changes in network features to changes in situational as well as personal characteristics of the elderly.

Personal Network Delineation

Methods for Network Delineation

A personal network is defined in general as the group of persons (network members) with whom a focal individual (anchor) has a direct relationship. There are various methods of delineating the social network. Some methods are based on the content of the relationships, some are based on the affective value of the ties, and other methods use the formal role relationship as a criterion for network membership. Research interests determine which method is used and which part of the larger social network will be identified.

The following five major methods can be used to identify networks of the aged: (1) the affective method, (2) the role relation method, (3) the exchange method, (4) the interactive method, and (5) the domain contact method. The five methods are conceptually unique and map different parts of the personal network. **Table 1** provides a summary of the main features of the five methods.

Table 1 Overview of network delineation methods

	Affective	*Role relation*	*Exchange*	*Interactive*	*Domain contact*
Conceptual definition	Network of significant others (affect based)	Network of formal role relations (role based)	Network of relations in which significant interactions occur (content based)	Network of persons with whom social interaction exists (contact based)	Network of socially active and important relations (contact and affect based)
Name generator(s) (examples)	"Who do you feel close to?"	"Name your spouse, children, neighbors, colleagues, friends"	"Who do you discuss personal problems with?" and "Who helps you with daily chores?"	"Name the persons you have contacted today for at least 10 minutes"	For each role relation (e.g., children, neighbors): "Who do you have regular contact with and who is also important to you?"
Number of questions asked	One or two	Depending on the roles of interest: five to seven	Three to 20	One (repeated every day for a certain period of time)	One for each role relation of interest (about seven)
Limits on period of time	No	No	Yes (past 6 months, past year)	Yes (2 weeks, one month, etc.)	No
Network size	Small (about three to nine)	Depends on the number of roles of interest	Large (10 to 22)	Large (16 to 26)	Medium (13 to 15)
Proportion of kin	Large (50 to 78%)	Depends on the roles of interest	Low (19 to 48%)	Low	Medium to large (66%)

The Affective Method

Conceptual framework The affective method identifies members who are of affective value to the focal individual, in other words, significant others or intimates. The underlying assumption is that these network members are potentially important sources of support for the focal individual. The method is commonly used by researchers who are interested in the 'psychological network,' defined as persons to whom the focal person feels attached.

Name generator This type of network is identified by asking one question: "Who do you feel close to?" or "Who are the persons who are important to you?" Some researchers set limits to the number of names to be mentioned; others apply a time frame (e.g., within the past 6 months). Sometimes a distinction is drawn in the degree of importance or the level of closeness of the network members.

Network features Typical of the affective network is a small size (about five to nine members), a large proportion of (close) kin (about 50 to 80%), a large number of long-standing relationships, and many supportive exchanges within the ties. The stability of this type of network is high, mostly because relationships that are stable, like those with close relatives and best friends, are cited.

Evaluation Crucial to this method is the subjective nature of the name generator. People are asked to evaluate relationships in terms of importance or closeness. This evaluation may be shaded by norms and obligations to mention relationships that are supposed to be important, for example, those with the spouse and children. A person is less inclined to mention relationships that are potentially supportive but not very important to the individual, for example, those with neighbors or colleagues. In addition, it need not be necessary to include persons with whom one interacts on a regular basis. As a result, this type of network can not be used to indicate the degree of social participation or integration of the focal individual. This type of network is positively related to the degree of well-being and negatively to feelings of loneliness of the central person. The major advantage of this method is that it has proven to be a robust method by yielding similar types of networks in different samples.

Role Relation Method

Conceptual framework The role relation method defines network membership purely on the basis of the formal role relationship maintained with the focal individual. Role relationships are derived from status variables such as marital status, employment status, type of living arrangements, friendship, and family status. The network accordingly includes the

partner, children, co-workers, friends, and members of the household. The underlying assumption is that the formal role relationship reflects norms and obligations with respect to the content of the relationship. The mere existence of relationships is expected to protect an individual from social isolation, illness, and loneliness.

Name generator Researchers using the role relation method do not always use a name generator. Inquiring after marital status, parental status, or job status will suffice if one is interested in the availability of a spouse, children, or co-workers. Researchers interested in the additional features of the role relationships have to use name generators. Examples include "Who is your partner?", "Who is your best friend?", and "Could you name two fellow members of your organizations?" The type of role relationship that is identified depends on the research objectives. Sometimes limits to the number of names to be mentioned are set.

Network features The size as well as other features of the network are completely dependent on the name generators used. The stability of the role network is high, since formal role relationships are not likely to change over a short period of time.

Evaluation The advantages of this method are that it is very easy to administer and it uses an objective measure for the identification of network members. Researchers interested in the social integration of individuals will be able to use this method successfully. One disadvantage is that relationships that have no formal role but that may nevertheless be important or supportive might be overlooked. The use of the role relation method in studies on support networks may therefore be limited.

Exchange Method

Conceptual framework The exchange method assumes that the relationships in which significant interaction occurs with network members are among the most important ones. Within this significant interaction, a regular exchange of emotional support, instrumental assistance, and material goods takes place. This interaction is considered to be of a supportive nature.

Name generator The exchange method uses several questions (usually six to ten) to identify members with whom significant interaction occurs. Examples include "Who do you talk about personal problems with?", "Who do you discuss problems at work with?", "Who helps you with daily chores around the house?", and "Who takes care of you if you are ill?" Often a limit to the number of names to be identified in response to each question is set. The number of questions asked is related to the number of persons to be identified, but there is a certain limit. It has been noted that asking five questions about different types of support (emotional and instrumental support and companionship) identifies about 80–85% of the persons who are mapped with ten questions. Some researchers distinguish between questions indicating the receipt of support ("Who helps you with daily chores?") and questions indicating the provision of support ("Who do you help with daily chores?"). This results in a larger number of identified persons compared to non-directive questioning about exchange relations.

Network features The typical exchange network is rather large, varying from about ten to 20 names. The proportion of kin within the network is rather low, varying from 35 to 50%. In general, the exchange network contains many relationships that are socially active at the time of measurement. A relatively large proportion of more superficial relationships is identified, based on a (temporary) sharing of the same workplace, organization membership, neighborhood, etc. The stability of the exchange network is relatively low compared to the affective and role relation networks, since many unstable non-kin relationships are identified.

Evaluation The exchange method is easy to administer and of a rather objective nature. The interactions are specific and not multi-interpretable. The exchange method can map different parts of the network. In contrast to the affective method, non-kin relationships are more likely to be identified. One disadvantage is that ties that are potentially supportive but not actually supportive at that moment are overlooked. In addition, persons one is socially involved with but with whom no significant interactions are exchanged (e.g., more distant relatives) are also excluded from this network. Crucial to this method is the fact that it focuses on the content of a tie rather than the formal role relationship or the degree of contact frequency.

The Interactive Method

Conceptual framework The interactive method identifies the persons with whom one engages in social interaction within a given period of time (e.g., 2 weeks, a month). The assumption is that the interactive network indicates the degree of social participation. It is found to be unrelated to support or well-being.

Name generator The interactive method requires a systematic recording of the people one has contact with on a daily basis. Usually this is done by having respondents maintain a diary or by contacting them daily by telephone. Respondents have to indicate whom they interacted with on that day for at least 10 minutes.

Network features The size of the interactive network depends on the period used for monitoring social interaction. The longer the period, the more different persons are identified. The interactive network may contain a large proportion of non-kin relationships, depending on the living situation of the respondent (married, employed, with children, etc.). The interaction network is apt to be sensitive to changes in daily contacts. Many superficial contacts that are part of the interaction network in a given period may not be included in another period of time.

Evaluation The interactive network is a good indicator of the degree of social participation, since it records daily social interaction. Comparing this method to other methods reveals a very small overlap between the networks. The affective and exchange networks are far more psychological, and their members usually do not meet every day. However, enlarging the monitoring period of the interactive network will eventually decrease the differences with the exchange network. A major advantage of daily monitoring is that it provides a reliable picture of the social interaction of the respondents.

The Domain Contact Method

Conceptual framework The domain contact method combines the different roles an individual performs with the frequency of contact and the importance of the relationships as criteria for the identification of network members. The main objective of this method is to identify the socially active relationships in the larger network. A central assumption is that this type of network constitutes the structural vehicle for the ties in which various types of support can be exchanged. In this line of reasoning, the potential or actual support exchanged is not a criteria for delineation, but an object of research on the delineation of the personal network.

Name generator Network members are identified in various domains of the network, e.g., household members (including the spouse), children and their partners, other relatives, neighbors, school or job acquaintances (including voluntary jobs), members of organizations (sport, church, political parties), and others (friends, acquaintances). All the household members are included in the network. As to the other domains, the respondents are asked, "Name the persons (e.g., in your neighborhood) you have frequent contact with and who are also important to you." No limits are set on the number of names to be mentioned.

Network features The domain contact network is medium to large (an average of 13 members, ranging from 0 to 75), with about two-thirds of the relationships being with relatives. Since that contact frequency is used as a criterion for identification, the average contact frequency with these network members is relatively high, between about once every 2 weeks and weekly.

Evaluation Using several criteria for network membership leads to a medium-sized network (compared to the smaller affective network and the larger exchange network) that contains a large range of role relationships. The method combines objective criteria (role relationship and contact frequency) and subjective criteria (importance) for the delineation of network relationships. As a result, the domain contact network indicates the actual degree of social participation as well as the availability of potentially supportive relationships.

Choices in Network Research

The examination of the personal networks of older adults requires several choices to be made by the researcher beforehand. The first choice concerns the type of method to be used for network delineation. This necessitates a clear description of the research objective. Usually, two types of research objectives can be distinguished: (1) the network has to indicate the degree of social participation of older adults, and (2) the network has to reflect the actual support reservoir of older adults. The first type of objective requires the use of the role relation method, the interactive method, or the domain contact method in the delineation of the network. The affective method and the exchange method are more appropriate if one has the second type of objective in mind.

The second choice within network research focuses on how many network members and relationships additional information will be collected on. In most network research (particularly large surveys), there is no time to collect information on all the network members who are identified. Some researchers have solved this time problem by setting limits to the number of names to be identified by the name generator. However, limits of this kind distort the

identification of the network because they leave uncertainty about the true size of the personal network. Since network size is crucial for the calculation of other structural and functional network features (e.g., proportion of kin), it is strongly recommended to set no limits on the number of persons to be identified. A better solution is to add an extra objective criterion such as contact frequency or traveling distance to the identification procedures. If interview time is of the essence, additional information can be asked about a selection of the network members. The selection criterion can either be objective, e.g., the ten persons contacted most frequently, or subjective, e.g., the six persons who are the most important. The disadvantage of the subjective option is that respondents have to choose between certain network members, which may be a difficult task.

The third choice in network research pertains to the type of information to be collected on some or all of the identified network members. Again, this choice is guided by the research objectives. Yet there seems to be a general consensus among network researchers that it is advisable to collect information on the type of relationship and sex of as many network members as possible. Researchers interested in the degree of social participation also inquire about the contact frequency with each network member, whereas support researchers are more interested in the support exchanged within the relationship.

A final choice the network researcher has to make involves who is to serve as a respondent in the study. Usually, the information on network members and relationships is obtained only from the focal individual, the anchor of the network. The identified network is then called a star network, and only information on the ties between the anchor and his or her network members is available (**Figure 1**). Yet it is also possible to include network members as respondents and ask them about the tie characteristics with the anchor and with the other identified members of the network. If members of a personal network report about identified ties with other network members, data are available on a full network (**Figure 2**).

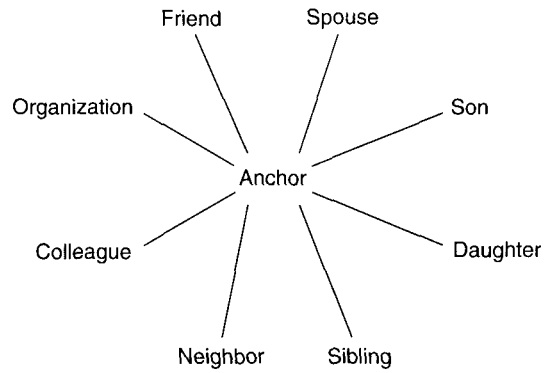

Figure 1 Graphic representation of a star network.

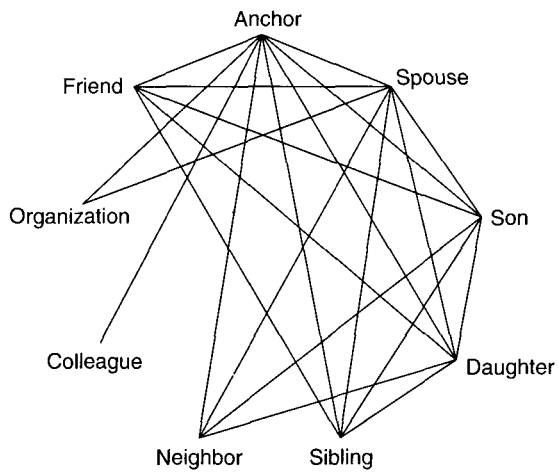

Figure 2 Graphic representation of a full network.

Features of the Personal Network

In a star network, the older adult is the focal person, the anchor. All the features of the network and the relationships can be linked with his or her behavior and state of mind. The following sections provide an overview of features of the network structure and content associated with aging. As people age, these aspects of the network are subject to changes and are therefore relevant to the study of the networks of older adults. **Tables 2** and **3** give examples of network structure and content based on information about relationship features.

Network Structure

The size of the network indicates how many relationships one is involved in, whether affect-based, role-based, or contact-based. Involvement in a larger network is associated with a larger degree of social participation and a greater exchange of support and well-being.

The network composition indicates the available proportions of kin and non-kin. The distinction between kin and non-kin is often too global, and it is wise to differentiate between relationships with a spouse, children, other kin, neighbors, friends, and other non-kin.

If information on the personal characteristics of the network members is available, it is possible to compute the homogeneity of the network with respect to sex, age, parental status, and so forth. It has often been reported that individuals like to associate with people who have similar backgrounds and who

Table 2 Features of network structure

Network structure	*Operationalization at the network level*	*Information on the dyad*	*Information on the network member*
Size	Total number of identified network members		
Composition	E.g., number of children, friends; proportion of kin	Role or type of relationship	
Homogeneity	E.g., total number of females in the network; percentage of members within the same age category	Similarity between characteristics of anchor and network member: e.g., same-sex or cross-sex	E.g., sex, age, race, partner status, employment status
Density	Total number of pairs who know each other of the total number of available pairs		How many of the other network members are known
Stability	Average years of network membership	Duration of the relationship	
Role complexity	Number of multiplex relationships	Number of different roles shared with the network member	
Geographical dispersion	E.g., number of persons living within 15 minutes; mean traveling time	Traveling time from anchor to network member	

Table 3 Features of the network content

Network content	*Operationalization at the network level*	*Information on the dyad*
Interaction	E.g., proportion of network members contacted at least weekly, mean frequency	Frequency of contact
Support intensity	E.g., total amount of emotional support received and given, proportion of ties with large social support intensity	Receiving and giving support (emotional, instrumental, social, material goods)
Support complexity	E.g., total number of multiplex relationships	Exchange of one versus more types of support
Reciprocity	E.g., average number of reciprocal relationships, proportion of unbalanced ties, ratio of given and received support	Balance between giving and receiving of support

are assumed to have similar life experiences. In particular, non-kin network members are expected to exhibit marked similarities in sex, age, and level of education with the focal individual, resulting in a large homogeneous non-kin network.

The density of the network refers to the interconnectedness between network members. Large networks usually have a low overall density, meaning that fewer network members interact with each other without the anchor being present. However, large networks may also contain specific parts that are very high in density (neighbors or close relatives). Networks that are low in density are generally found with younger persons who are highly educated and participate in various social organizations that are only loosely connected to each other, if at all. Small networks usually have a high density and are generally more prevalent among elderly people with a relatively low level of education. Dense networks are generally composed of persons who have been interacting for many years, indicating a high stability within the network.

Network members may have more than one formal role relationship with the focal person. A neighbor may also be a friend, and a second-degree relative may also be a member of the same club. At the network level, role complexity is indicated by the number of uniplex (one formal role) or multiplex relationships. Networks with a high role complexity are usually also small and densely knit.

The geographical dispersion within the network indicates the extent to which network members live in the same neighborhood or region by the proportion of network members who live less than 15 minutes' drive away. The geographical dispersion of the network demonstrates the availability of potential supporters in the vicinity of the older adult.

Content of the Network

The overall interaction of the older adult with the network members is often used as a token of social participation. Network interaction may vary among different parts of the network. Interaction is higher

with the spouse, children, and neighbors than it is with distant relatives and acquaintances. The more frequently one interacts with network members, the more likely the exchange of support. The support intensity of the network refers to the exchange of support between all the network members and the focal person. Various types of support can be distinguished: emotional support, instrumental support, social support (companionship), material support, and so on. Furthermore, a distinction can be drawn between giving and receiving support. The types of support vary among the types of relationships, and among older men and women. Men are known to exchange instrumental support, whereas women are known to give and receive emotional support to an old age.

The exchange of two or more types of support within the network relationships indicates the support complexity of the network. Some network members provide emotional as well as instrumental support, whereas others exchange only material goods.

Last, the balance between the overall provision and receipt of support indicates the support reciprocity within the network. In general, elderly people receive more support than they provide. This is particularly the case after there is a strong decline in their physical capacities. Giving and receiving support is usually more balanced for women than men. An unbalanced support network has a negative impact on the well-being of the elderly. The imbalance created by being in debt to many network members leads to feelings of guilt, whereas providing support to many relatives and friends without receiving much in return can lead to feelings of being exploited.

Methods of Network Analysis

Data Storage

Network data are hierarchically constructed. There are two levels of star network data. The elderly person as the anchor of the network is the higher level, with such characteristics as sex, age, network size, and well-being. Inside of it, characteristics of the network members such as sex, and characteristics of their relationships with each other such as traveling time and support received by the elderly person are on the lower level. There are three levels of full network data: the network as a whole, for example, its size; the characteristics of the network members including the elderly person; and the features of their relationships with each other. The data are stored in accordance with this hierarchic structure.

Analysis of Network Data

One of the attractions of having network data at one's disposal is that data on different levels can be linked to each other. There are two methods for simultaneously analyzing the data on both levels: aggregation and disaggregation.

In aggregation, data from the lower level of the separate network members and/or relationships are transferred to the higher level of the elderly person. For each elderly person, a researcher can take the mean of the contact frequency within his or her relationships and introduce the average contact frequency as variable in an analysis to explain the differences in the well-being of elderly people. A variant on aggregation as the average frequency of contact across relationships would be to count the number of network members with whom there is contact at least once a week. Statistical software has capacities for aggregation of this kind.

In disaggregation, data from the higher level of the elderly person are related to the lower level of the separate network members and/or relationships, for example, when the researcher wants to find out whether more support is exchanged in same-sex relationships than in cross-sex relationships. Data from different cases are not independent of each other, so this violates an assumption of many analysis techniques. The application of multi-level analysis is appropriate. In this analysis technique, a linear regression equation is formulated for explaining variance in a variable on the lower level from the perspective of other variables on the lower level. The support received by an elderly person is then predicted on the basis of, for example, the sex of the network member and of the elderly person. Interaction effects can be added to the model. A crucial aspect is that the magnitude of the effect of explanatory variables on the relationship level may differ between respondents. Therefore, the intercept as well as the slopes of the different independent variables in this equation are then explained with different regression equations from the perspective of independent variables on the higher level, such as the age and health of the elderly person. Multi-level analysis techniques are available as specific software.

Summary and Conclusions

The personal network is considered a social resource and is important for daily functioning, coping with life events, and maintaining well-being. The impact of aging on the personal network becomes evident in the changes within the structure as well as the content of the network. The personal network of the elderly can be studied with different objectives. The researcher can focus on the content of the network, e.g., the relation between support and well-being, or on structural aspects of the network, e.g., the relation of

marital status to its size, composition, and density. In every network study, several methodological choices are made beforehand: which network delineation method is to be used, whether additional information is to be collected on some or all of the identified network members, which information is to be collected, and who will provide this information (only the older adult or all the members of the network).

See also: Bereavement and Loss; Caregiving and Caring; Demography; Economics: Society; Hearing; Life Course; Loneliness; Memory; Psychological Well-Being; Social Networks, Support, and Integration.

Further Reading

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